Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	775901	array or arrays or microarray or microarrays	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/05/02 11:39
L2	29625	l1 and oligonucleotide$	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/05/02 11:40
L3	27932	l2 and DNA	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/05/02 11:40
L4	211	l3 and 'different concentration'	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2005/05/02 11:40

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  * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 15:49:17 ON 02 MAY 2005

=> b ca
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'CA' ENTERED AT 15:49:26 ON 02 MAY 2005
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=> s array? or microarray?
        106403 ARRAY?
         27634 MICROARRAY?
L1      127537 ARRAY? OR MICROARRAY?

=> s l1 and (dna or oligonucleotide?)
        692986 DNA
         72773 OLIGONUCLEOTIDE?
L2       28139 L1 AND (DNA OR OLIGONUCLEOTIDE?)

=> s l2 and (different concentration?)
       1998743 DIFFERENT
        203538 CONCENTRATION?
          1195 DIFFERENT CONCENTRATION?
                 (DIFFERENT(W)CONCENTRATION?)
L3           0 L2 AND (DIFFERENT CONCENTRATION?)

=> s l2 and (different(8w)concentration?)
       1998743 DIFFERENT
        203538 CONCENTRATION?
          2574 DIFFERENT(8W)CONCENTRATION?
L4           0 L2 AND (DIFFERENT(8W)CONCENTRATION?)

=> s l2 and concentration?
        203538 CONCENTRATION?
L5          74 L2 AND CONCENTRATION?

=> s l5 and different
       1998743 DIFFERENT
L6          12 L5 AND DIFFERENT

=> d ti ab 1-12

L6   ANSWER 1 OF 12  CA  COPYRIGHT 2005 ACS on STN
TI   Hybridization isotherms of DNA microarrays and the
     quantification of mutation studies
AB   Diagnostic DNA arrays for detection of point mutations
     as markers for cancer usually function in the presence of a large excess
     of wild type DNA.  This excess can give rise to false positives
     due to competitive hybridization of the wild type target at the mutation
     spot.  The anal. of the DNA array data is typically
     qual. aiming to establish the presence or absence of a particular point
     mutation.  Our theor. approach yields methods for quantifying the anal. so
     as to obtain the ratio of concns. of mutated and wild type DNA.
     The theory is formulated in terms of the hybridization isotherms relating
     the hybridization fraction at the spot to the composition of the sample solns.
     at thermodn. equilibrium  It focuses on samples containing an excess of single
     stranded DNA and on DNA arrays with low
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surface d. of probes. The hybridization equilibrium consts. can be obtained by the nearest neighbor method. Two approaches allow us to obtain quant. results from the **DNA array** data. In one the signal of the mutation spot is compared with that of the wild type spot. The implementation requires knowledge of the saturation intensity of the two spots. The second approach requires comparison of the intensity of the mutation spot at two **different** temps. In this case knowledge of the saturation signal is not always necessary. **DNA arrays** can be used to obtain quant. results on the concentration ratio of mutated **DNA** to wild type **DNA** in studies of somatic point mutations.

L6 ANSWER 2 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Analytic chip for quantifying nucleic acid **concentration**, analytic device for quantifying nucleic acid **concentration** and analytic method for quantifying nucleic acid **concentration**
AB The invention relates to a device having a plural number of working electrodes, each carrying a single nucleic acid probe having a nucleic acid complementary with a target nucleic acid which is immobilized thereon and being **different** from each other in sensor area, and a normalization circuit for normalizing detection signals obtained in the working electrodes concerning resp. sensor areas.

L6 ANSWER 3 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Relationship between G+C content, ORF-length and mRNA **concentration** in Saccharomyces cerevisiae
AB RNA biogenesis is a tightly-regulated process. The levels and timing of expression of a gene depends on its particular function. However, gene expression levels may also depend on structural features. Here we describe the anal. of gene expression of 4977 ORFs using **DNA microarrays** covering the whole genome of three **different** S. cerevisiae strains, wild-type and tho2 and thp1 mutants with a general effect on mRNA biogenesis. We show that transcripts from G+C-rich ORFs accumulate at higher concns. than those from G+C-poor ones, in **different** ORF-length categories in all strains tested. In addition, we found a neg. correlation between ORF length and G+C content. Our results indicate that length and G+C content of a gene have a clear effect on its levels of expression. We discuss the biol. relevance of these results, as well as **different** ways that these structural features could modulate mRNA biogenesis.

L6 ANSWER 4 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Injector-concentrator electrodes for microchannel electrophoresis
AB An input port geometry, with injector-concentrator electrodes, for planar microchannel **array** for electrophoresis. This input port geometry enables efficient extraction and injection of the **DNA** sample from a single input port. The geometry, which utilizes injector-concentrator electrodes, allows simultaneous concentration, in **different** channels, of the sample into a longitudinally narrow strip just before releasing it for a run with enhanced injection spatial resolution, and time resolution Optional multiple electrodes, at a **different** bias than the concentrator electrodes, may be used to discriminate against sample impurity ions. Electrode passivation can be utilized to prevent electrolysis. An addnl. electrode in or on the input hole can better define the initial loading. The injector-concentrator electrodes are positioned so that they cross the drift channel in a narrow strip at the bond plane between the top and bottom plates of the instrument and are located close to the inlet hole. The optional sample purification electrodes are located at a greater distance from the input hole than the injector-concentrate electrodes.

L6 ANSWER 5 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Transcriptional regulation and signature patterns revealed by **microarray** analyses of Streptococcus pneumoniae R6 challenged with

sublethal **concentrations** of translation inhibitors

AB The effects of sublethal concns. of four **different** classes of translation inhibitors (puromycin, tetracycline, chloramphenicol, and erythromycin) on global transcription patterns of Streptococcus pneumoniae R6 were determined by **microarray** analyses. Consistent with the general mode of action of these inhibitors, relative transcript levels of genes that encode ribosomal proteins and translation factors or that mediate tRNA charging and amino acid biosynthesis increased or decreased, resp. Transcription of the heat shock regulon was induced only by puromycin or streptomycin treatment, which lead to truncation or mistranslation, resp., but not by other antibiotics that block translation, transcription, or amino acid charging of tRNA. In contrast, relative transcript amts. of certain genes involved in transport, cellular processes, energy metabolism, and purine nucleotide (pur) biosynthesis were changed by **different** translation inhibitors. In particular, transcript amts. from a pur gene cluster and from purine uptake and salvage genes were significantly elevated by several translation inhibitors, but not by antibiotics that target other cellular processes. Northern blotting confirmed increased transcript amts. from part of the pur gene cluster in cells challenged by translation inhibitors and revealed the presence of a 10-kb transcript. Purine metabolism genes were neg. regulated by a homolog of the PurR regulatory protein, and full derepression in a ΔpurR mutant depended on optimal translation. Unexpectedly, hierarchical clustering of the **microarray** data distinguished among the global transcription patterns caused by antibiotics that inhibit **different** steps in the translation cycle. Together, these results show that there is extensive control of transcript amts. by translation in S. pneumoniae, especially for de novo purine nucleotide biosynthesis. In addition, these global transcription patterns form a signature that can be used to classify the mode of action and potential mechanism of new translation inhibitors.

L6 ANSWER 6 OF 12 CA COPYRIGHT 2005 ACS on STN

TI **Microarrays** and their manufacture by slicing bundled compound-containing fibers

AB **Microarrays** are prepared by using a sep. fiber for each compound being used in the **microarray.** The fibers are bundled and sectioned to form a thin **microarray** that may be glued to a backing. Antibodies to human serum albumin, transferrin, and haptoglobin were immobilized and crosslinked to Poros G particles. Each of the types of antibody-bearing particles plus particles free of antibodies was mixed with melted agarose and a **different** food coloring and sucked into a length of 1 mm diameter plastic tubing and gelled into rods. The rods were laid into an aluminum channel with more melted agarose to form an **array** of parallel rods embedded in a square cross-section bar of agarose. After the bar gelled, the gel was removed from the mold and transverse sections were prepared by slicing thin slices perpendicular to the axis of the bar and mounted on a glass slide.

L6 ANSWER 7 OF 12 CA COPYRIGHT 2005 ACS on STN

TI Extensions of counterion condensation theory. I. Alternative geometries and finite salt **concentration**

AB The counterion condensation theory originally proposed by Manning is extended to take account of both finite counterion concentration (mC) and the actual structure of the **array** of discrete changes. Counterion condensation is treated here as a binding isotherm problem, in which the unknown free volume is replaced by an unknown local binding constant β', which is expected to vary with mC and polyion structure. The relation between the condensed fraction of counterion charge, r, β' and mC is obtained from the relevant grand partition function via the maximum term method. In the case of the single polyion in a large salt reservoir, the result is practically identical to Manning's equation. In order to determine the values of β' and r at arbitrary mC, a second relation between r, β' and mC is required. We propose an alternative auxiliary relation

that is equivalent to previous assumptions near mC=0, but which yields qual. correct and quant. useful results at finite mC. Simple expressions for r vs. mC and β' vs. mC are obtained by simultaneously solving the binding isotherm and auxiliary equations. Then r and β' are evaluated for five **different** linear **arrays** of infinite extent with **different** geometries: (1) a straight line of charges with uniform axial spacing; (2) two parallel lines of in-phase uniformly spaced charges; (3) a single-helix of discrete charges with uniform axial spacing; (4) a double-helix of discrete charges with uniform axial spacing of pairs of charges; (5) a cylindrical **array** of many parallel charged lines, chosen to simulate a uniformly charged cylinder. In all cases, the computed binding isotherms exhibit qual. correct behavior. As mC approaches zero, r approaches the Manning limit, r=1-1/(LB/b) where b is the average axial spacing of electronic charges in the **array** and LB is the Bjerrum length. However, β' varies with polyion geometry, even in the zero salt limit, and matches the Manning value only in the case of a single straight charged line. With increasing mC, r declines significantly below its limiting value whenever λb.gtorsim.0.3, where λ is the Debye screening parameter. In the case of cylindrical **arrays** containing either 2 or 100 parallel charged lines, r also decreases, whenever λd.gtorsim.2.0, where d is the diameter of the **array.** In the case of two parallel charged lines, each with axial charge spacing b=3.4 Å, which are separated by d=200 Å, r exhibits a plateau value, 0.76, characteristic of the two combined lines, when λd«2.0, and declines with increasing mC to a shelf value, 0.52, characteristic of either single line, when λd.gtorsim.2.0 and the lines become effectively screened from one another. β' Behaves in a roughly similar fashion. In the case of a cylindrical **array** of charged lines with the diameter and linear charge d. of **DNA**, the r-values predicted by the present theory agree fairly well with those predicted by non-linear Poisson-Boltzmann theory up to 0.15 M uni-univalent salt.

L6 ANSWER 8 OF 12 CA

TI Biochip having probe molecules deposited in predetermined spatial **concentration** patterns

AB The present invention provides a method of and apparatus for manufacturing a biochip in which **different** probe mols. are deposited on the substrate of the biochip with **different** concns. in accordance with a predetd. spatial concentration pattern. The present invention also provides a test apparatus which uses the known concentration patterns to identify reactions of the **different** types of probe mols. with a test sample.

L6 ANSWER 9 OF 12 CA

TI Probing electrical properties of oriented **DNA** by conducting atomic force microscopy

AB **Different** methods have been applied for the stretching of **DNA** mols. on chemical functionalized surfaces by various modified reagents, i.e. 3-aminopropyltriethanoxysilane or polylysine on mica and 2-mercaptoethylamine on Au(111)/mica by a moving interface technique, magnesium cation (Mg^{2+}) on mica by a spin-stretching method and **DNA** on an atomic-level flat mica by a free-flowing method. The long λ- **DNA** mol. is well elongated using the moving interface technique. The **DNA** mol. **array** d. can be controlled by the change of surface charge d. and the **DNA** concentration On the other hand, the novel free-flowing method is very useful for the alignment of short polynucleotide mols. Shadow-mask evaporation has been used to fabricate a gold electrode contacted elec. to the oriented **DNA** mols. The intrinsic elec. properties of individual **DNA** mols. are directly measured using a conducting probe atomic force microscope equipped with a gold-coated conductive tip. The **DNA** mol. is considered as a promising mol. wire.

L6 ANSWER 10 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Apparatus and method to measure the activation state of signaling pathways in cells
AB Te invention concerns the activity of multiple proteins in a single living cell, portion of a cell or in a group of cells simultaneously measured by introducing reporter mols. The reporter(s) is chemical modified by the enzyme of interest. In some cases the enzyme(s) is affected by the addition of a stimulus or a pharmaceutical compound to the cell. The reactions between the enzymes and the reporters are diminished or terminated, and the reporter and modified reporter are removed. The activity of the enzyme(s) is determined by measuring the amount of reporter remaining, the amount of altered reporter produced, or by comparing the amount of reporter to the amount of altered reporter. A database is compiled of the activities of the **different** proteins. By performing a series of expts. at **different** time points, conditions, and varieties of cell types, a database is developed for mol. cellular mechanisms in health and disease states. By exposing cells to variety of compds. data for drug development and screening is provided. Diagrams describing the apparatus assembly and operation are given.

L6 ANSWER 11 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Relationship of codon bias to mRNA **concentration** and protein length in Saccharomyces cerevisiae
AB In 1982, Ikemura reported a strikingly unequal usage of **different** synonymous codons, in five Saccharomyces cerevisiae nuclear genes having high protein levels. To study this trend in detail, we examined data from three independent studies that used **oligonucleotide arrays** or SAGE to estimate mRNA concns. for nearly all genes in the genome. Correlation coeffs. were calculated for the relationship of mRNA concentration to four commonly used measures of synonymous codon usage bias: the codon adaptation index (CAI), the codon bias index (CBI), the frequency of optimal codons (Fop), and the effective number of codons (Nc). MRNA concentration was best approximated as an exponential function of each of these four measures. Of the four, the CAI was the most strongly correlated with mRNA concentration ($rs=0.62\pm0.01$, $n=2525$, $p<10-17$). When we controlled for CAI, mRNA concentration and protein length were neg. correlated (partial $rs=-0.23\pm0.01$, $n=4765$, $p<10-17$). This may result from selection to reduce the size of abundant proteins to minimize transcriptional and translational costs. When we controlled for mRNA concentration, protein length and CAI were pos. correlated (partial $rs=0.16\pm0.01$, $n=4765$, $p<10-17$). This may reflect more effective selection in longer genes against missense errors during translation. The correlation coeffs. between the mRNA levels of individual genes, as measured by **different** investigators and methods, were low, in the range rs=0.39-0.68.

L6 ANSWER 12 OF 12 CA COPYRIGHT 2005 ACS on STN
TI Method and apparatus for detecting low **concentrations** of (bio)chemical components in a test medium using surface plasmon resonance
AB A method and an apparatus are described for detecting low concns. of ≥1 (bio)chemical component present in a test medium in a test cell, having a metal layer as sub wall with an external glass prism, using the surface plasmon resonance effect. A light ray is coupled in and, after attenuated total reflection, is coupled out and the intensity thereof is measured. The incidence angle position of the resonance curve is determined under the influence of the change, caused by the component, in the dielec. constant to the test medium near the metal layer. An adjustable selector is applied to the metal layer, in order to influence the incidence angle position of the resonance curve, through which the concns. or concentration changes of ≥1 components in the test medium can be simultaneously determined through ≥1 differential measurement. A preferential association and

therefore a higher concentration at the metal layer of 1 component above another
is brought about. The adjustable selector at the metal layer is formed by an **array** of (bio)chemical affinity ligands which are fixedly adsorbed to the metal layer. The **array** of (bio)chemical affinity ligands are a number of **different** antibodies, antigens, or **DNA**- or RNA-probes, such that in the test medium various antigens, antibodies, or homologous **DNA**, resp., can be determined

=> d all 8

L6 ANSWER 8 OF 12 CA COPYRIGHT 2005 ACS on STN
AN 138:1933 CA
ED Entered STN: 26 Dec 2002
TI Biochip having probe molecules deposited in predetermined spatial **concentration** patterns
IN Jones, Aled Wynne; Beckett, Martin Gregory
PA Scientific Generics Limited, UK
SO PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM B01J019-00
ICS B01L003-00
CC 9-1 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002096552	A2	20021205	WO 2002-GB2567	20020605
	WO 2002096552	A3	20030410		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-13358 A 20010601
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002096552	ICM	B01J019-00
	ICS	B01L003-00

AB The present invention provides a method of and apparatus for manufacturing a biochip
in which **different** probe mols. are deposited on the substrate of the biochip with **different** concns. in accordance with a predetd. spatial concentration pattern. The present invention also provides a test apparatus
which uses the known concentration patterns to identify reactions of the **different** types of probe mols. with a test sample.
ST biochip probe deposition concn pattern
IT CCD cameras
Computer program
Computers
Concentration (condition)
DNA microarray technology
Fluorometry
Immobilization, molecular or cellular
Microarray technology

```
     Protein **microarray** technology
        (biochip having probe mols. deposited in predetd. spatial concentration
        patterns)
IT   DNA
     Proteins
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (biochip having probe mols. deposited in predetd. spatial concentration
        patterns)
IT   Gases
     Gels
     Liquids
        (carrying probe onto substrate; biochip having probe mols. deposited in
        predetd. spatial concentration patterns)
IT   Information systems
        (data; biochip having probe mols. deposited in predetd. spatial
concentration
        patterns)
IT   Apparatus
        (for biochip manufacturing and for testing biochips; biochip having probe
        mols. deposited in predetd. spatial concentration patterns)
IT   Electric field
        (having predetd. spatial pattern; biochip having probe mols. deposited
        in predetd. spatial concentration patterns)
IT   DNA
     Proteins
     RL: ARG (Analytical reagent use); DEV (Device component use); TEM
     (Technical or engineered material use); ANST (Analytical study); USES
     (Uses)
        (immobilized, probe mols.; biochip having probe mols. deposited in
        predetd. spatial concentration patterns)
IT   Biosensors
        (optical; biochip having probe mols. deposited in predetd. spatial
        concentration patterns)
IT   Chemicals
        (probe mols.; biochip having probe mols. deposited in predetd. spatial
        concentration patterns)
IT   DNA sequences
        (probes for; biochip having probe mols. deposited in predetd. spatial
        concentration patterns)
IT   Cell
     Eubacteria
     Virus
        (probes; biochip having probe mols. deposited in predetd. spatial
        concentration patterns)
IT   Information systems
        (storage; biochip having probe mols. deposited in predetd. spatial
        concentration patterns)
IT   Bar code labels
        (two-dimensional, on substrate surface; biochip having probe mols.
        deposited in predetd. spatial concentration patterns)
IT   Pressure
        (waves having predetd. spatial pattern; biochip having probe mols.
        deposited in predetd. spatial concentration patterns)


=> e 'jones, aled wynne'/au
E1          1     JONES ZEBULON J R/AU
E2          2     JONES ZOE A/AU

=> s e169
L7          5 "JONES ALED WYNNE"/AU

=> d ti ab 1-5
```

L7 ANSWER 1 OF 5 CA COPYRIGHT 2005 ACS on STN
TI Methods and apparatus for DNA sequencing
AB A carrier carries a computer program for base calling DNA bases from a dataset corresponding to observed traces obtained from electrophoresis. The program generates a database in the computer memory corresponding to a model of a DNA sequence and refines the model of the DNA sequence by the following operations making a change to the base sequence of the model, predicting the form of the traces from the modified model, comparing the predicted traces with the observed traces in dataset to generate a penalty function, determining whether or not to accept the modified model based on the value of the penalty function; and repeating operations until termination criteria have been achieved. The program has the advantage that it is less empirical and dependent on exptl. setup than existing programs such as Phred.

L7 ANSWER 2 OF 5 CA COPYRIGHT 2005 ACS on STN
TI Biochip having probe molecules deposited in predetermined spatial concentration patterns
AB The present invention provides a method of and apparatus for manufacturing a biochip in which different probe mols. are deposited on the substrate of the biochip with different concns. in accordance with a predetd. spatial concentration pattern. The present invention also provides a test apparatus which uses the known concentration patterns to identify reactions of the different types of probe mols. with a test sample.

L7 ANSWER 3 OF 5 CA COPYRIGHT 2005 ACS on STN
TI Assay apparatus, assay method, and probe array for use in same
AB Assay apparatus is disclosed which comprises: probe means; a reaction volume for exposing said probe means to an analyte; and sensor means for detecting radiation emitted by said probe means in response to excitation; wherein said probe means comprises a plurality of probes arrayed in said reaction volume, and said sensor means and said reaction volume are coupled such that selective or simultaneous detection of radiation emitted from plural probes is permitted.

L7 ANSWER 4 OF 5 CA COPYRIGHT 2005 ACS on STN
TI Method and apparatus for manufacture of biochip array
AB The invention concerns a method of and apparatus for manufacturing a biochip in which droplets containing at least one probe substance are deposited at random onto the biochip substrate. The probes are preferably sprayed using, for example, an aerosol nozzle or the like. In another embodiment, an electromagnetic, acoustic or optical deflector may be used to deflect the aerosol droplets in order to deposit the droplets onto the biochip in a pseudo-array. In a further embodiment, a test apparatus is provided in which a spatial intensity profile of a probe site is measured and used to reduce noise caused by, for example, scratches on the surface of the biochip. Diagrams describing the apparatus assembly and operation are given.

L7 ANSWER 5 OF 5 CA COPYRIGHT 2005 ACS on STN
TI Sample processing apparatus
AB The present invention provides a system for processing biol. or chemical samples. The system includes a support for supporting the sample and a mount which is movable relative to the sample by a positioner. The positioner includes a number of flexure elements which are rigid along their axis of extent and flexible along the or each axis of extent of the other flexure elements. The flexure elements are rigidly secured at one of their ends to the mount and displaceably mounted at the other of their ends to an actuator which is operable to move the flexure element and hence move the mount.

```
=> d all 2

L7   ANSWER 2 OF 5  CA  COPYRIGHT 2005 ACS on STN
AN   138:1933  CA
ED   Entered STN:  26 Dec 2002
TI   Biochip having probe molecules deposited in predetermined spatial
     concentration patterns
IN   Jones, Aled Wynne; Beckett, Martin Gregory
PA   Scientific Generics Limited, UK
SO   PCT Int. Appl., 51 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  B01J019-00
     ICS  B01L003-00
CC   9-1 (Biochemical Methods)
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
PI   WO 2002096552        A2    20021205   WO 2002-GB2567         20020605
     WO 2002096552        A3    20030410
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,
             GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,
             GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-13358        A     20010601
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 -------------   -----  ----------------------------------------------
 WO 2002096552   ICM    B01J019-00
                 ICS    B01L003-00
AB   The present invention provides a method of and apparatus for manufacturing a
biochip
     in which different probe mols. are deposited on the substrate of the
     biochip with different concns. in accordance with a predetd. spatial
     concentration pattern.  The present invention also provides a test apparatus
which
     uses the known concentration patterns to identify reactions of the different
     types of probe mols. with a test sample.
ST   biochip probe deposition concn pattern
IT   CCD cameras
     Computer program
     Computers
     Concentration (condition)
     DNA microarray technology
     Fluorometry
     Immobilization, molecular or cellular
     Microarray technology
     Protein microarray technology
        (biochip having probe mols. deposited in predetd. spatial concentration
        patterns)
IT   DNA
     Proteins
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (biochip having probe mols. deposited in predetd. spatial concentration
        patterns)
IT   Gases
```

Gels
Liquids
(carrying probe onto substrate; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Information systems
(data; biochip having probe mols. deposited in predetd. spatial
concentration
patterns)
IT Apparatus
(for biochip manufacturing and for testing biochips; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Electric field
(having predetd. spatial pattern; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT DNA
Proteins
RL: ARG (Analytical reagent use); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(immobilized, probe mols.; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Biosensors
(optical; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Chemicals
(probe mols.; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT DNA sequences
(probes for; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Cell
Eubacteria
Virus
(probes; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Information systems
(storage; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Bar code labels
(two-dimensional, on substrate surface; biochip having probe mols. deposited in predetd. spatial concentration patterns)
IT Pressure
(waves having predetd. spatial pattern; biochip having probe mols. deposited in predetd. spatial concentration patterns)

=> d all 3-5

L7 ANSWER 3 OF 5 CA COPYRIGHT 2005 ACS on STN
AN 137:165799 CA
ED Entered STN: 12 Sep 2002
TI Assay apparatus, assay method, and probe array for use in same
IN Laitenberger, Peter Georg; Disley, Darrin Matthew; Hember, Miles William Noel; **Jones, Aled Wynne**
PA Scientific Generics Limited, UK
SO PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N021-64
CC 9-1 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

```
PI   WO 2002066965        A2    20020829   WO 2002-GB717          20020219
     WO 2002066965        A3    20030213
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-4009         A     20010219
     GB 2001-4010         A     20010219
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
 --------------   -----  ----------------------------------------------
 WO 2002066965    ICM    G01N021-64
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AB   Assay apparatus is disclosed which comprises: probe means; a reaction volume for
     exposing said probe means to an analyte; and sensor means for detecting
     radiation emitted by said probe means in response to excitation; wherein
     said probe means comprises a plurality of probes arrayed in said reaction
     volume, and said sensor means and said reaction volume are coupled such that
     selective or simultaneous detection of radiation emitted from plural
     probes is permitted.

ST   array optical probe biomol detection

IT   CCD cameras
     Diffraction gratings
     Electroluminescent devices
     Fluorometry
     High throughput screening
     Interferometers
     Lab-on-a-chip
     Lasers
     Lenses
     Microarray technology
     Micromachining
     Optical fibers
     Optical waveguides
     Optics
     Phosphorimetry
     Sensors
     Synchrotron radiation
        (assay apparatus, assay method, and probe array for use in same)

IT   DNA
     RL: ANT (Analyte); ANST (Analytical study)
        (assay apparatus, assay method, and probe array for use in same)

IT   Borosilicates
     RL: DEV (Device component use); USES (Uses)
        (assay apparatus, assay method, and probe array for use in same)

L7   ANSWER 4 OF 5 CA COPYRIGHT 2005 ACS on STN
AN   137:151997 CA
ED   Entered STN: 05 Sep 2002
TI   Method and apparatus for manufacture of biochip array
IN   Davies, Philip Andrew; **Jones, Aled Wynne**; Disley, Darrin
     Matthew; Hember, Miles William Noel; Miller, Nick; Hendry, Stuart Paul;
     Timson, Daniel Reginald Ewart
PA   Scientific Generics Limited, UK
SO   PCT Int. Appl., 61 pp.
     CODEN: PIXXD2
DT   Patent
LA   English

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IC   ICM  B01L003-02
     ICS  B01J019-00
CC   9-1 (Biochemical Methods)
     Section cross-reference(s): 1
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.       DATE
     ---------------     ----   --------    --------------------  --------
PI   WO 2002064255        A1    20020822    WO 2002-GB664         20020215
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
        RW:  GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-3767         A     20010215
     GB 2001-3768         A     20010215
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 --------------  -----  ----------------------------------------------
 WO 2002064255   ICM    B01L003-02
                 ICS    B01J019-00
```

AB   The invention concerns a method of and apparatus for manufacturing a biochip in which droplets containing at least one probe substance are deposited at random onto the biochip substrate. The probes are preferably sprayed using, for example, an aerosol nozzle or the like. In another embodiment, an electromagnetic, acoustic or optical deflector may be used to deflect the aerosol droplets in order to deposit the droplets onto the biochip in a pseudo-array. In a further embodiment, a test apparatus is provided in which a spatial intensity profile of a probe site is measured and used to reduce noise caused by, for example, scratches on the surface of the biochip. Diagrams describing the apparatus assembly and operation are given.

ST   biochip array aerosol droplet protein DNA probe drug screening

IT   Apparatus
       (acoustic deflector; method and apparatus for manufacture of biochip array)

IT   Information systems
       (data, positional; method and apparatus for manufacture of biochip array)

IT   Optical instruments
       (deflectors; method and apparatus for manufacture of biochip array)

IT   Apparatus
       (electromagnetic deflector; method and apparatus for manufacture of biochip array)

IT   Aerosols
     Analytical apparatus
     Animal cell
     Biotechnology
     Charge coupled devices
     Chemicals
     Computer program
     Computers
     Drug screening
     Immobilization, molecular or cellular
     Light
     Liquids
     Optical detectors
     Storage
     Virus
     Water reservoirs
       (method and apparatus for manufacture of biochip array)

IT   DNA

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     Probes (nucleic acid)
     Proteins
     RL: ARG (Analytical reagent use); DEV (Device component use); ANST
     (Analytical study); USES (Uses)
        (method and apparatus for manufacture of biochip array)
IT   Information, biological
        (substrate serial number; method and apparatus for manufacture of biochip
array)
RE.CNT  4     THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Commissariat Energie Atomique; FR 2791280 A 2000
(2) Hahn Schickard Ges; DE 19913076 A 2000
(3) Hahn Schickard Ges; DE 19947878 C 2001 CAPLUS
(4) Tisone, T; US 6063339 A 2000 CA

L7   ANSWER 5 OF 5  CA  COPYRIGHT 2005 ACS on STN
AN   137:87627  CA
ED   Entered STN:  01 Aug 2002
TI   Sample processing apparatus
IN   Davies, Philip Andrew; Disley, Darrin Matthew; Jones, Aled Wynne
     ; Purvis, Duncan Ross; Beckett, Martin Gregory; Miller, Nicholas;
     Miller-Jones, David Nicholas
PA   Scientific Generics Limited, UK
SO   PCT Int. Appl., 50 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  B01L009-06
     ICS  G01N001-31; B01J019-00; G01N035-10; G01N035-04
CC   80-2 (Organic Analytical Chemistry)
     Section cross-reference(s): 9
FAN.CNT 1
     PATENT NO.          KIND   DATE          APPLICATION NO.         DATE
     ---------------     ----   --------      --------------------    --------
PI   WO 2002055201        A2    20020718      WO 2002-GB122           20020114
     WO 2002055201        A3    20021114
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-901          A     20010112
     GB 2001-1896         A     20010124
     GB 2001-1898         A     20010124
     GB 2001-2344         A     20010130
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
 --------------   -----  ----------------------------------------------
 WO 2002055201    ICM    B01L009-06
                  ICS    G01N001-31; B01J019-00; G01N035-10; G01N035-04
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AB The present invention provides a system for processing biol. or chemical samples. The system includes a support for supporting the sample and a mount which is movable relative to the sample by a positioner. The positioner includes a number of flexure elements which are rigid along their axis of extent and flexible along the or each axis of extent of the other flexure elements. The flexure elements are rigidly secured at one of their ends to the mount and displaceably mounted at the other of their ends to an actuator which is operable to move the flexure element and hence move the mount.

ST processing app materials handling
IT Materials handling
(apparatus; sample processing apparatus for biol. or chemical samples)
IT Actuators
Bending
Biological materials
Microarray technology
Optical fibers
(sample processing apparatus for biol. or chemical samples)

=> s e143-e144
1 "BECKETT MARTIN G"/AU
2 "BECKETT MARTIN GREGORY"/AU
L8 3 ("BECKETT MARTIN G"/AU OR "BECKETT MARTIN GREGORY"/AU)

=> d ti ab 1-3

L8 ANSWER 1 OF 3 CA COPYRIGHT 2005 ACS on STN
TI Biochip having probe molecules deposited in predetermined spatial concentration patterns
AB The present invention provides a method of and apparatus for manufacturing a biochip in which different probe mols. are deposited on the substrate of the biochip with different concns. in accordance with a predetd. spatial concentration pattern. The present invention also provides a test apparatus which uses the known concentration patterns to identify reactions of the different types of probe mols. with a test sample.

L8 ANSWER 2 OF 3 CA COPYRIGHT 2005 ACS on STN
TI Sample processing apparatus
AB The present invention provides a system for processing biol. or chemical samples. The system includes a support for supporting the sample and a mount which is movable relative to the sample by a positioner. The positioner includes a number of flexure elements which are rigid along their axis of extent and flexible along the or each axis of extent of the other flexure elements. The flexure elements are rigidly secured at one of their ends to the mount and displaceably mounted at the other of their ends to an actuator which is operable to move the flexure element and hence move the mount.

L8 ANSWER 3 OF 3 CA COPYRIGHT 2005 ACS on STN
TI Infrared observations of gravitational lensing in Abell 2219 with CIRSI
AB We present the 1st detection of a gravitational depletion signal at near-IR wavelengths, based on deep panoramic images of the cluster Abell 2219 (z = 0.22) taken with the Cambridge IR survey instrument (CIRSI) at the prime focus of the 4.2-m William Herschel telescope. IR studies of gravitational depletion offer a number of advantages over similar techniques applied at optical wavelengths, and can provide reliable total masses for intermediate-red shift clusters. Using the maximum-likelihood technique developed by Schneider, King & Erben, we detect the gravitational depletion at the 3σ confidence level. By modeling the mass distribution as a singular isothermal sphere and ignoring the uncertainty in the unlensed number counts, we find an Einstein radius of θE ≈ 13.7-4.2+3.9 arcsec (66% confidence limit). This corresponds to a projected velocity dispersion of σv ≈ 800 km s-1, in agreement with constraints from strongly lensed features. For a Navarro, Frenk, & White mass model, the radial dependence observed indicates a best-fitting halo scale-length of 125 h-1 kpc. We investigate the uncertainties arising from the observed fluctuations in the unlensed number counts, and show that clustering is the dominant source of error. We extend the maximum-likelihood method to include the effect of incompleteness, and discuss the prospects of further systematic studies of lensing in the

near-IR band.

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=> e 'shalon'/au
E1            2      SHALOMOVA T P/AU
E2            1      SHALOMYANSKY A M/AU
E3            0 --> SHALON/AU
E4            1      SHALON D/AU
E5            7      SHALON DARI/AU
E6            6      SHALON R/AU
E7            1      SHALON RAHEL/AU
E8            1      SHALON S/AU
E9            9      SHALON TADMOR/AU
E10           1      SHALON TIDHAR D/AU
E11           3      SHALON TIDHAR DARI/AU
E12           2      SHALON Y/AU

=> s e10-e11
              1 "SHALON TIDHAR D"/AU
              3 "SHALON TIDHAR DARI"/AU
L9            4 ("SHALON TIDHAR D"/AU OR "SHALON TIDHAR DARI"/AU)

=> d ti ab 1-4
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L9 ANSWER 1 OF 4 CA

TI Capillary printing systems

AB The invention provides printing systems and methods for depositing small vols. of liquid on solid substrates and is particularly suited for printing high-d. anal. arrays. These systems and methods are useful with a wide variety of liqs. and substrates and offer a wide variety of applications, including the deposition of arrays of analytes. In particular embodiments, the systems comprise a preservation device, a detachable ganged plurality of printing devices, and/or a wire bonding capillary.

L9 ANSWER 2 OF 4 CA

TI Methods for fabricating microarrays of biological samples

AB A method and apparatus for forming microarrays of biol. samples on a support are disclosed. The method involves dispensing a known volume of a reagent at each selected array position, by tapping a capillary dispenser on the support under conditions effective to draw a defined volume of liquid onto the support. The apparatus is designed to produce a microarray of such regions in an automated fashion. The apparatus is used for genetic methods, e.g. microarray hybridization for gene expression with high partial concentration of each cDNA species; multiplex colorimetric hybridization on a gridded support; genomic complexity hybridization to DNA where microarrays represent the Saccharomyces cerevisiae genome etc.

L9 ANSWER 3 OF 4 CA

TI Dna micro arrays: a new tool for genetic analysis

AB Unavailable

L9 ANSWER 4 OF 4 CA

TI Method and apparatus for fabricating microarrays of biological samples

AB A method and apparatus for forming microarrays of biol. samples on a support are disclosed for, e.g., large-scale screening assays, such as arrays of DNA samples to be used in DNA hybridization assays for genetic research and diagnostic applications. The method involves dispensing a known volume of a reagent at each of a selected array position, by tapping a capillary dispenser on the support under conditions effective to draw a defined volume of liquid onto the support. The apparatus is designed to produce a microarray of
of
such regions in an automated fashion.

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=> d all 1-4

L9   ANSWER 1 OF 4  CA  COPYRIGHT 2005 ACS on STN
AN   132:201091  CA
ED   Entered STN:  31 Mar 2000
TI   Capillary printing systems
IN   Shalon, Tidhar D.; Maurino, Joseph R.; Titsworth, Loren D.;
     Bevirt, Joeben
PA   Incyte Pharmaceuticals, Inc., USA
SO   PCT Int. Appl., 30 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  B01L003-02
CC   74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
     Section cross-reference(s): 3, 79, 80
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   WO 2000013796        A1    20000316    WO 1999-US20692         19990909
         W:  AU, CA, JP
         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE
     US 6309891           B1    20011030    US 1998-150502          19980909
     CA 2342785           AA    20000316    CA 1999-2342785         19990909
     AU 9959153           A1    20000327    AU 1999-59153           19990909
     AU 748153            B2    20020530
     EP 1109624           A1    20010627    EP 1999-946833          19990909
     EP 1109624           B1    20040218
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
     JP 2003519360        T2    20030617    JP 2000-568592          19990909
     EP 1374998           A1    20040102    EP 2003-20699           19990909
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI, CY
     AT 259678            E     20040315    AT 1999-946833          19990909
     US 2001013298        A1    20010816    US 2001-819166          20010327
     US 2002064887        A1    20020530    US 2001-819172          20010327
     US 2001044157        A1    20011122    US 2001-884506          20010614
     JP 2004155201        A2    20040603    JP 2003-387270          20031117
PRAI US 1998-150502       A     19980909
     EP 1999-946833       A3    19990909
     JP 2000-568592       A3    19990909
     WO 1999-US20692      W     19990909
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 2000013796   ICM    B01L003-02
 WO 2000013796   ECLA   B01J019/00C; B01L003/00C2D
 US 6309891      NCL    436/180.000; 073/864.010; 101/494.000; 141/031.000;
                        422/100.000; 436/049.000; 436/054.000; 436/176.000
                 ECLA   B01J019/00C; B01L003/00C2D; B01L003/02D
 EP 1374998      ECLA   B01L003/02D
 US 2001013298   NCL    101/494.000
                 ECLA   B01J019/00C; B01L003/00C2D; B01L003/02D
 US 2002064887   NCL    436/180.000; 422/100.000; 347/040.000
                 ECLA   B01J019/00C; B01L003/00C2D; B01L003/02D
 US 2001044157   NCL    436/180.000; 422/100.000; 422/131.000
                 ECLA   B01J019/00C; B01L003/00C2D; B01L003/02D
 JP 2004155201   FTERM  2C064/CC07; 2C064/CC08; 2C064/CC13; 4F041/AA02;
                        4F041/AB01; 4F041/BA02; 4F041/BA10; 4F041/BA12;
                        4F041/BA13; 4F041/BA36
AB   The invention provides printing systems and methods for depositing small
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vols. of liquid on solid substrates and is particularly suited for printing high-d. anal. arrays. These systems and methods are useful with a wide variety of liqs. and substrates and offer a wide variety of applications, including the deposition of arrays of analytes. In particular embodiments, the systems comprise a preservation device, a detachable ganged plurality of printing devices, and/or a wire bonding capillary.

ST capillary printing system analysis array

IT Capillary vessel
Printing (nonimpact)
(capillary printing systems for depositing small vols. of liquid on solid substrates for printing high-d. anal. arrays in relation to)

IT Polynucleotides
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(capillary printing systems for depositing small vols. of liquid on solid substrates for printing high-d. anal. arrays in relation to)

IT Materials handling
(delivery apparatus; capillary printing systems for depositing small vols. of liquid on solid substrates for printing high-d. anal. arrays in relation to)

IT Samples
(liquid; capillary printing systems for depositing small vols. of liquid on solid substrates for printing high-d. anal. arrays in relation to)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Akihiro, K; US 5607861 A 1997 CA
(2) Hrubesh, C; US 4441532 A 1984
(3) Konrad, B; US 5763278 A 1998
(4) Roach, D; US 5770151 A 1998 CA
(5) Smith, M; US 4142656 A 1979
(6) Sohrab, D; WO 8910192 A 1989
(7) Univ Leland Stanford Junior; WO 9535505 A 1995 CA

L9 ANSWER 2 OF 4 CA COPYRIGHT 2005 ACS on STN
AN 129:226623 CA
ED Entered STN: 24 Oct 1998
TI Methods for fabricating microarrays of biological samples
IN Brown, Patrick O.; **Shalon, Tidhar Dari**
PA The Board of Trustees of the Leland Stanford Junior University, USA
SO U.S., 18 pp., Cont.-in-part of U.S. Ser. No. 261,388, abandoned.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12M001-34
ICS C12M001-40
INCL 422050000
CC 3-1 (Biochemical Genetics)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5807522	A	19980915	US 1995-477809	19950607
	CA 2192095	AA	19951228	CA 1995-2192095	19950616
	CA 2192095	C	19990831		
	WO 9535505	A1	19951228	WO 1995-US7659	19950616
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9528629	A1	19960115	AU 1995-28629	19950616
	AU 709276	B2	19990826		
	EP 804731	A1	19971105	EP 1995-923921	19950616
	EP 804731	B1	19990526		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	JP 10503841	T2	19980407	JP 1995-502498	19950616
	EP 913485	A1	19990506	EP 1998-123001	19950616
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	AT 180570	E	19990615	AT 1995-923921	19950616

ES 2134481	T3	19991001	ES 1995-923921	19950616
JP 3272365	B2	20020408	JP 1996-502498	19950616
JP 2002243736	A2	20020828	JP 2001-132630	19950616
US 6110426	A	20000829	US 1997-1027	19971230
US 2003012695	A1	20030116	US 1998-356322	19981124
US 2001051344	A1	20011213	US 2001-908304	20010717

PRAI US 1994-261388 B2 19940617
US 1995-477809 A 19950607
EP 1995-923921 A3 19950616
JP 1996-502498 A3 19950616
WO 1995-US7659 W 19950616
US 1995-514875 A2 19950814
US 1996-688488 A1 19960730
US 1998-188931 A1 19981110

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5807522	ICM	C12M001-34
	ICS	C12M001-40
	INCL	422050000
US 5807522	NCL	422/050.000; 422/052.000; 422/055.000; 422/056.000; 422/057.000; 422/068.100; 422/069.000; 422/082.050; 422/082.060; 422/082.070; 422/082.080; 435/006.000; 435/007.100; 436/501.000; 530/300.000; 530/333.000; 530/334.000; 530/350.000; 536/025.300
	ECLA	B01J019/00C; B01L003/02D; C12Q001/68A6; C12Q001/68B10A; G01N033/543K
WO 9535505	ECLA	B01J019/00C; B01L003/02D; C12Q001/68A6; C12Q001/68B10A; G01N033/543K
EP 913485	ECLA	B01J004/02; B01L003/02D; B01J019/00C
US 6110426	NCL	422/068.100; 422/050.000; 435/006.000; 435/283.100; 436/051.000; 536/025.300
	ECLA	B01J019/00C
US 2003012695	NCL	422/068.100; 435/006.000; 536/023.100
	ECLA	B01J004/02; B01J019/00C; B01L003/02D; C12Q001/68A6; C12Q001/68B10A; G01N033/543K
US 2001051344	NCL	435/006.000; 435/069.100; 422/068.100
	ECLA	B01L003/02D; C12Q001/68A6+565/501; C12Q001/68B10A+565/102

AB A method and apparatus for forming microarrays of biol. samples on a support are disclosed. The method involves dispensing a known volume of a reagent at each selected array position, by tapping a capillary dispenser on the support under conditions effective to draw a defined volume of liquid onto the support. The apparatus is designed to produce a microarray of such regions in an automated fashion. The apparatus is used for genetic methods, e.g. microarray hybridization for gene expression with high partial concentration of each cDNA species; multiplex colorimetric hybridization on a gridded support; genomic complexity hybridization to DNA where microarrays represent the Saccharomyces cerevisiae genome etc.

ST dispensing app capillary microarray hybridization DNA

IT Dispensing apparatus
(dosing; methods for fabricating microarrays of biol. samples)

IT Biological materials
Colorimetry
Genetic methods
Genome
Micromachining
Nucleic acid hybridization
Process automation
Saccharomyces cerevisiae
(methods for fabricating microarrays of biol. samples)

IT Reagents
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); ANST (Analytical study); USES (Uses)

(methods for fabricating microarrays of biol. samples)
IT DNA
cDNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(methods for fabricating microarrays of biol. samples)
RE.CNT 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Anon; WO 9003382 1990 CA
(2) Anon; WO 9210588 1992 CA
(3) Anon; WO 9322680 1993 CA
(4) Anon; WO 9500530 1995 CA
(5) Anon; WO 9515970 1995 CA
(6) Anon; WO 9521944 1995 CA
(7) Anon; WO 9525116 1995 CA
(8) Anon; EP 721016 A2 1996 CA
(9) Anon; WO 9617958 1996 CA
(10) Augenlicht; US 4981783 1991 CA
(11) Barrett; US 5252743 1993 CA
(12) Billings; FASEB 1991, V5, P28 CA
(13) Brennan; US 5474796 1995 CA
(14) Chang; US 4591570 1986 CA
(15) Chang; US 5100777 1992 CA
(16) Chateau; US 4071315 1978 CA
(17) Chee; Science 1996, V274, P610 CA
(18) Chiswell; US 4716106 1987 CA
(19) Cozzette; US 5200051 1993 CA
(20) Dattagupta; US 4670380 1987 CA
(21) Dattagupta; US 5348855 1994 CA
(22) Deeg; US 5338688 1994
(23) Douglas; US 5556748 1996 CA
(24) Drmanac; US 5202231 1993 CA
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(44) Mills; US 5064754 1991 CA
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(47) Okano; US 5434049 1995 CA
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(51) Peters; US 5013669 1991
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(62) Trulson; US 5578832 1996 CA
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(70) Zuckerma; US 5252296 1993

L9 ANSWER 3 OF 4 CA COPYRIGHT 2005 ACS on STN
AN 124:308810 CA
ED Entered STN: 29 May 1996
TI Dna micro arrays: a new tool for genetic analysis
AU **Shalon, Tidhar Dari**
CS Stanford Univ., Stanford, CA, USA
SO (1996) 108 pp. Avail.: Univ. Microfilms Int., Order No. DA9612036
From: Diss. Abstr. Int., B 1996, 56(12), 6534
DT Dissertation
LA English
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 10, 11
AB Unavailable
ST DNA micro array genetics Arabidopsis Saccharomyces
IT Arabidopsis thaliana
Genetic mapping
Genetics
Saccharomyces cerevisiae
(DNA micro arrays: a new tool for genetic anal. of gene expression and phys. mapping in organisms such as Arabidopsis and Saccharomyces)
IT Gene
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(expression, DNA micro arrays: a new tool for genetic anal. of gene expression and phys. mapping in organisms such as Arabidopsis and Saccharomyces)

L9 ANSWER 4 OF 4 CA COPYRIGHT 2005 ACS on STN
AN 124:137802 CA
ED Entered STN: 06 Mar 1996
TI Method and apparatus for fabricating microarrays of biological samples
IN **Shalon, Tidhar Dari**; Brown, Patrick O.
PA Board of Trustees of the Leland Stanford Junior University, USA
SO PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-543
ICS G01N033-68
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9535505	A1	19951228	WO 1995-US7659	19950616
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5807522	A	19980915	US 1995-477809	19950607
	AU 9528629	A1	19960115	AU 1995-28629	19950616
	AU 709276	B2	19990826		

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     EP 804731           A1    19971105   EP 1995-923921         19950616
     EP 804731         . B1    19990526
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE
     JP 10503841         T2    19980407   JP 1995-502498         19950616
PRAI US 1994-261388      A     19940617
     US 1995-477809      A     19950607
     WO 1995-US7659      W     19950616
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 -------------- -----  -----------------------------------------
 WO 9535505      ICM    G01N033-543
                 ICS    G01N033-68
 WO 9535505      ECLA   B01J019/00C; B01L003/02D; C12Q001/68A6; C12Q001/68B10A;
                        G01N033/543K
 US 5807522      NCL    422/050.000; 422/052.000; 422/055.000; 422/056.000;
                        422/057.000; 422/068.100; 422/069.000; 422/082.050;
                        422/082.060; 422/082.070; 422/082.080; 435/006.000;
                        435/007.100; 436/501.000; 530/300.000; 530/333.000;
                        530/334.000; 530/350.000; 536/025.300
                 ECLA   B01J019/00C; B01L003/02D; C12Q001/68A6; C12Q001/68B10A;
                        G01N033/543K
AB   A method and apparatus for forming microarrays of biol. samples on a support
     are disclosed for, e.g., large-scale screening assays, such as arrays of
     DNA samples to be used in DNA hybridization assays for genetic research
     and diagnostic applications.  The method involves dispensing a known volume
     of a reagent at each of a selected array position, by tapping a capillary
     dispenser on the support under conditions effective to draw a defined volume
     of liquid onto the support.  The apparatus is designed to produce a microarray
of
     such regions in an automated fashion.
ST   biol sample automated reagent dispensing app; DNA hybridization assay
     microarray prepn app; gene expression hybridization assay app
IT   Dispensing apparatus
        (automatic; method and apparatus for fabricating microarrays of biol.
        samples)
IT   Samples
        (biol.; method and apparatus for fabricating microarrays of biol. samples)
IT   Gene
     RL: ANT (Analyte); ANST (Analytical study)
        (expression; method and apparatus for fabricating microarrays of biol.
        samples)
IT   Analysis
     Arabidopsis
     Genome
     Holders
     Immobilization, biochemical
     Nucleic acid hybridization
     Plant analysis
     Polymer-supported reagents
     Polymerase chain reaction
     Saccharomyces cerevisiae
        (method and apparatus for fabricating microarrays of biol. samples)
IT   Biopolymers
     Deoxyribonucleic acids
     Nucleic acids
     Peptides, analysis
     RL: ANT (Analyte); ANST (Analytical study)
        (method and apparatus for fabricating microarrays of biol. samples)
IT   Named reagents and solutions
     RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
        (method and apparatus for fabricating microarrays of biol. samples)
IT   Glass, oxide
     RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
     (Analytical study); USES (Uses)
```

```
        (slides; method and apparatus for fabricating microarrays of biol. samples)
IT   Deoxyribonucleic acids
     RL: ANT (Analyte); ANST (Analytical study)
        (complementary, method and apparatus for fabricating microarrays of biol.
        samples)
IT   Nucleotides, analysis
     RL: ANT (Analyte); ANST (Analytical study)
        (poly-, method and apparatus for fabricating microarrays of biol. samples)
IT   Chemicals
        (reagents, method and apparatus for fabricating microarrays of biol.
        samples)
IT   2321-07-5D, Fluorescein, oligonucleotides labeled with
     RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
        (method and apparatus for fabricating microarrays of biol. samples)
IT   9004-70-0, Nitrocellulose   25104-18-1, Polylysine   38000-06-5,
     Polylysine
     RL: ARU (Analytical role, unclassified); DEV (Device component use); ANST
     (Analytical study); USES (Uses)
        (method and apparatus for fabricating microarrays of biol. samples)


=> d his

     (FILE 'HOME' ENTERED AT 15:49:17 ON 02 MAY 2005)

     FILE 'CA' ENTERED AT 15:49:26 ON 02 MAY 2005
L1       127537 S ARRAY? OR MICROARRAY?
L2        28139 S L1 AND (DNA OR OLIGONUCLEOTIDE?)
L3            0 S L2 AND (DIFFERENT CONCENTRATION?)
L4            0 S L2 AND (DIFFERENT(8W)CONCENTRATION?)
L5           74 S L2 AND CONCENTRATION?
L6           12 S L5 AND DIFFERENT
                E 'JONES, ALED WYNNE'/AU
                E 'JONES, ALED'/AU
                E 'JONES, A?'/AU
                E 'JONES'/AU
L7            5 S E169
                E 'BECKETT, MARTIN'/AU
                E 'BECKETT'/AU
L8            3 S E143-E144
                E 'SHALON'/AU
L9            4 S E10-E11

=> s l2 and (concentration(10w)spot?)
       140649 CONCENTRATION
        96294 SPOT?
           57 CONCENTRATION(10W)SPOT?
L10           0 L2 AND (CONCENTRATION(10W)SPOT?)

=> s l5 not l6
L11          62 L5 NOT L6

=> d his

     (FILE 'HOME' ENTERED AT 15:49:17 ON 02 MAY 2005)

     FILE 'CA' ENTERED AT 15:49:26 ON 02 MAY 2005
L1       127537 S ARRAY? OR MICROARRAY?
L2        28139 S L1 AND (DNA OR OLIGONUCLEOTIDE?)
L3            0 S L2 AND (DIFFERENT CONCENTRATION?)
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L5           74 S L2 AND CONCENTRATION?
L6           12 S L5 AND DIFFERENT
                E 'JONES, ALED WYNNE'/AU
```

```
                 E 'JONES, ALED'/AU
                 E 'JONES, A?'/AU
                 E 'JONES'/AU
L7             5 S E169
                 E 'BECKETT, MARTIN'/AU
                 E 'BECKETT'/AU
L8             3 S E143-E144
                 E 'SHALON'/AU
L9             4 S E10-E11
L10            0 S L2 AND (CONCENTRATION(10W)SPOT?)
L11           62 S L5 NOT L6

=> b biosis
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   231.75     231.96

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)        SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -63.92     -63.92

FILE 'BIOSIS' ENTERED AT 16:22:27 ON 02 MAY 2005
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 27 April 2005 (20050427/ED)

FILE RELOADED: 19 October 2003.

=> s l2
         42543 ARRAY?
         15873 MICROARRAY?
       1068260 DNA
         48348 OLIGONUCLEOTIDE?
L12      16406 L1 AND (DNA OR OLIGONUCLEOTIDE?)

=> s l12 not l2
         42543 ARRAY?
         15873 MICROARRAY?
       1068260 DNA
         48348 OLIGONUCLEOTIDE?
L13          0 L12 NOT L2

=> b medline
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.85     232.81

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)        SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                     0.00     -63.92

FILE 'MEDLINE' ENTERED AT 16:22:54 ON 02 MAY 2005

 FILE LAST UPDATED: 30 APR 2005 (20050430/UP).  FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available.  For details enter HELP
 RLOAD at an arrow promt (=>).  See also:
```

```
    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2005 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s l2
         48736 ARRAY?
         12430 MICROARRAY?
        797644 DNA
         67604 OLIGONUCLEOTIDE?
L14      20445 L1 AND (DNA OR OLIGONUCLEOTIDE?)

=> s l14 not l2
         48736 ARRAY?
         12430 MICROARRAY?
        797644 DNA
         67604 OLIGONUCLEOTIDE?
L15          0 L14 NOT L2

=> s l14 and different(w)concentration?
       1068128 DIFFERENT
       1037046 CONCENTRATION?
          9945 DIFFERENT(W)CONCENTRATION?
L16         17 L14 AND DIFFERENT(W)CONCENTRATION?

=> d ti ab 1-17

=> d all 10

L16  ANSWER 10 OF 17     MEDLINE on STN
AN   2003502771      MEDLINE
DN   PubMed ID: 14579528
TI   Validation of cDNA microarray technology.
AU   Luo Yao; Xu Hong; Li Yao; Han Zhi-Yong; Qiu Min-Yan; Chen Qin; Liu
     San-Zhen; Ni Sheng; Xie Yi; Mao Yu-Min
CS   State Key Laboratory of Genetic Engineering, Institute of Genetics, School
     of Life Science, Fudan University, Shanghai 200433, China..
     yao_luo@hotmail.com
SO   Yi chuan xue bao = Acta genetica Sinica, (2003 Jul) 30 (7) 611-8.
     Journal code: 7900784. ISSN: 0379-4172.
CY   China
DT   Journal; Article; (JOURNAL ARTICLE)
     (VALIDATION STUDIES)
LA   Chinese
FS   Priority Journals
EM   200312
ED   Entered STN: 20031029
     Last Updated on STN: 20031219
     Entered Medline: 20031211
AB   cDNA microarray is a technological approach that has the
     potential to globally measure changes in mRNA expression levels.
     Self-comparison experiments with the same kind of tissue and differential
     expression experiments with the different kinds of tissue have been done
     to verify the reproducibility and the accuracy of this technique.  The
     parameter of the reliability and the reproducibility of the
     microarray data were analyzed by correlation coefficient (R),
     coefficient of variation (CV) and false positive rate (FPR) etc.
     Meanwhile, the error resource also has been inspected.  These results
```

```
     showed that generally the correlation coefficient of data from this cDNA
     microarray system was more than 0.9, the coefficient of variation
     was about 15%, and the false positive rate was below 3%.  The result
     proves the accuracy of the cDNA microarray data.  Consistence
     rate (CR) was advanced here as a new parameter to evaluate the
     reproducibility of two replicate experiments.  It has some advantages over
     correlation coefficient and coefficient of variation.  The influence of
     some important factors in the experiments, such as different
     concentration of spotted DNA, mRNA and total RNA,
     different batches of slides and different processes of labeling, have been
     investigated by comparing the results.  It was shown that most of the
     false position produced by the experiment system could be reduced by
     replicate experiments.
CT    English Abstract
      Humans
       *Oligonucleotide Array Sequence Analysis: MT, methods
      Reproducibility of Results


=> d his

     (FILE 'HOME' ENTERED AT 15:49:17 ON 02 MAY 2005)

     FILE 'CA' ENTERED AT 15:49:26 ON 02 MAY 2005
L1         127537 S ARRAY? OR MICROARRAY?
L2          28139 S L1 AND (DNA OR OLIGONUCLEOTIDE?)
L3              0 S L2 AND (DIFFERENT CONCENTRATION?)
L4              0 S L2 AND (DIFFERENT(8W)CONCENTRATION?)
L5             74 S L2 AND CONCENTRATION?
L6             12 S L5 AND DIFFERENT
                E 'JONES, ALED WYNNE'/AU
                E 'JONES, ALED'/AU
                E 'JONES, A?'/AU
                E 'JONES'/AU
L7              5 S E169
                E 'BECKETT, MARTIN'/AU
                E 'BECKETT'/AU
L8              3 S E143-E144
                E 'SHALON'/AU
L9              4 S E10-E11
L10             0 S L2 AND (CONCENTRATION(10W)SPOT?)
L11            62 S L5 NOT L6

     FILE 'BIOSIS' ENTERED AT 16:22:27 ON 02 MAY 2005
L12         16406 S L2
L13             0 S L12 NOT L2

     FILE 'MEDLINE' ENTERED AT 16:22:54 ON 02 MAY 2005
L14         20445 S L2
L15             0 S L14 NOT L2
L16            17 S L14 AND DIFFERENT(W)CONCENTRATION?

=> s l12 and different(w)concentration?
         48736 ARRAY?
         12430 MICROARRAY?
        797644 DNA
         67604 OLIGONUCLEOTIDE?
       1068128 DIFFERENT
       1037046 CONCENTRATION?
          9945 DIFFERENT(W)CONCENTRATION?
L17         17 L12 AND DIFFERENT(W)CONCENTRATION?

=> s l17 not l16
L18          0 L17 NOT L16
```